AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A method of loading a self-expanding stent into a delivery sheath, comprising:

i) providing said stent as a covered stent having a stent matrix with surfaces defining luminal and abluminal envelopes spaced apart by a stent wall thickness, a covering material bonded to the matrix lying radially inside the luminal envelope;

ii) providing a stent pusher in a lumen defined by the stent, the stent pusher having protrusions distributed along the length of the stent lumen;

iii) compressing the stent radially inwardly until the protrusions deform the covering material but do not reach radially outwardly as far as the luminal envelope; and

iv) imposing an endwise force on the stent pusher so that the covering material transfers the pushing force from the protrusions of the stent pusher to the stent matrix to advance the stent into the sheath.

2. (Original) Method as claimed in claim 1, including the step of arranging the protrusions helically, so that the stent pusher can be withdrawn from the lumen of the stent, inside the sheath, by unscrewing the stent pusher relative to the stent lumen.

3. (Previously presented) A delivery system including a self-expanding stent in a percutaneous transluminal delivery catheter that includes a sheath that withdraws proximally to release the stent at a stenting site, comprising:

i) a pusher within the sheath that extends along the lumen of the stent and has radially outwardly extending protrusions distributed along the length of the stent lumen;

ii) the stent being a covered stent having a matrix with surfaces defining luminal and abluminal envelopes spaced apart by a stent wall thickness, a covering material bonded to the matrix lying radially inside the luminal envelope; and

iii) the stent being positioned over the protrusions such that the protrusions deform the covering material but do not reach radially outwardly as far as the luminal envelope.

4. (Previously presented) The delivery system as claimed in claim 3, wherein the stent matrix comprises metal and the covering comprises expanded polytetrafluoroethylene.

5. (Previously presented) The delivery system as claimed in claim 3, wherein the stent matrix is apertured and the covering is bonded to an abluminal stent covering layer through the apertures.

6. (Previously presented) The delivery system as claimed in claim 3, wherein the stent matrix is formed from a nickel-titanium shape memory alloy.

7. (Previously presented) The delivery system as claimed in claim 3, wherein said protrusions are the turns of a spiral.

8. (Previously presented) The delivery system as claimed in claim 3, with a tapered distal tip on said sheath.

9. (Previously presented) The delivery system as claimed in claim 3, with a tapered distal tip on said pusher, distal of said sheath.

10. (Previously presented) A delivery system, comprising:

a self-expanding stent having a wall and a luminal and abluminal wall surface, a first covering layer positioned on at least the luminal wall surface;

an outer sheath having a distal end configured to receive and maintain the stent in a reduced diameter delivery configuration; and

an inner catheter having a distal end positioned within a lumen of the stent, the inner catheter including radially outwardly extending protrusions along the distal end that extend into the covering without intersecting a plane along the luminal wall surface.

11. (Previously presented) The delivery system according to claim 10, further comprising a second covering layer on the abluminal surface of the stent, wherein the first covering layer is bonded to the second covering layer through apertures in the stent wall.

12. (Previously presented) The delivery system according to claim 11, wherein the first and second covering layers are comprised of ePTFE.

13. (Previously presented) The delivery system according to claim 10, further comprising a plurality of markers.

14. (Previously presented) The delivery system according to claim 13, wherein the markers are arranged circumferentially about a proximal and distal end of the stent.

15. (Previously presented) The delivery system according to claim 10, wherein the protrusions are formed by a wire arranged helically about the inner catheter.

16. (Previously presented) The delivery system according to claim 15, wherein the inner catheter is comprised of stainless steel, and the wire is bonded to the inner catheter.

17. (Previously presented) The delivery system according to claim 10, wherein the outer sheath includes a tapered distal end.

18. (Previously presented) The delivery system according to claim 10, wherein the stent is cut from a nickel-titanium tube.

19. (Currently amended) A method of loading a self-expanding stent into a delivery sheath, the stent including a covering layer on a luminal wall surface, comprising:

~~providing a self-expanding stent having a covering layer positioned on a luminal wall surface;~~

providing a stent pusher including protrusions on a distal end thereof;

radially compressing the stent over the protrusions such that the protrusions deform the covering layer but do not intersect a plane along the luminal wall surface; and

inserting the stent pusher ~~inner catheter~~ and stent into the sheath.

20. (Previously presented) The method according to claim 1, wherein the protrusions are arranged helically about the distal end of the stent pusher, further comprising the step of withdrawing the stent pusher by unscrewing it from the covering layer.

21. (Previously presented) The delivery system according to claim 3, wherein the pusher has an outside diameter smaller than a luminal diameter of the stent.

22. (Previously presented) The delivery system according to claim 8, wherein the tapered distal tip narrows to an end ring of a diameter appropriate to receive a guidewire.

23. (Previously presented) The delivery system according to claim 10, wherein the inner catheter comprises a material selected from the group consisting of stainless steel, flexible polymer, and combinations thereof.

24. (Previously presented) The delivery system according to claim 10, wherein the inner catheter defines a guidewire lumen.

25. (Previously presented) The delivery system according to claim 10, wherein the delivery system comprises a rapid exchange system with the guidewire lumen only in a distal zone of the delivery system.

26. (Previously presented) The delivery system according to claim 13, wherein the markers are comprised of tantalum.

27. (Previously presented) The delivery system according to claim 15, wherein the wire is comprised of stainless steel.

28. (Currently amended) A method of deploying a stent, comprising:

providing a delivery system ~~including a~~ with the stent loaded in a reduced diameter configuration between an inner catheter and an outer sheath, the stent including a covering positioned on a luminal wall surface thereof, the inner catheter including radially outwardly extending protrusions that extend into the covering;

advancing the delivery system to a stenting site; and

withdrawing the outer sheath to deploy the stent at the stenting site.

29. (Previously presented) The method according to claim 28, wherein the withdrawing includes a tip of the outer sheath stretching and sliding over an abluminal wall surface of the stent.

30. (Previously presented) The method according to claim 28, wherein the withdrawing includes withdrawing the outer sheath by moving a proximal end of the outer sheath in a proximal direction.

31. (Previously presented) The method according to claim 28, wherein the withdrawing includes using a pull wire within a shaft lumen to proximally move the outer sheath.

32. (Previously presented) The method according to claim 28, further comprising withdrawing the inner catheter from the lumen of the stent graft following expansion thereof to an expanded diameter.